Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ERIC BENAZZI, NATHALIE GEORGE-MARCHAL,
CHRISTOPHE GUERET,
PATRICK BRIOT,
ALAIN BILLION,
and
PIERRE MARION

Appeal No. 2001-0771
Application No. 09/103,528

ON BRIEF

Before CAROFF, TIMM, and NAGUMO, Administrative Patent Judges.

CAROFF, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-17. Claims 18-30, all the other claims in appellants' application, stand withdrawn from consideration,

pursuant to the provisions of 37 CFR § 1.142(b), as being drawn to a nonelected invention and, thus, are not before us.

The claims before us are directed to an EU-1 zeolite (hereinafter referred to as EU-1), defined in "product-by-process" terms, as well as a process for modifying EU-1 by removing at least some of element "T," e.g., aluminum, from a starting zeolite.

Appellants request separate consideration of claims 3-6. Therefore, all the other claims on appeal stand or fall with claim 1, the sole independent claim. Accordingly, we focus our attention primarily upon claim 1 which reads as follows:

> 1. A modified EU-1 zeolite comprising silicon and an element T which is Al, Fe, Ga, or B, produced by a process in which at least a portion of elements T are removed from a starting zeolite, whereby the modified zeolite has a global atomic ratio Si/T higher than that of the starting zeolite, by at least 10% of the Si/T ratio of the starting zeolite.

The prior art references relied upon by the examiner on appeal are:

Casci et al. (Casci)	4,537,754	Aug. 27, 1985
Kuehl et al. (Kuehl)	4,954,243	Sep. 4, 1990

Claims 1-17 stand rejected under 35 U.S.C. § 103 for obviousness in view of Casci taken in combination with Kuehl.[1]

We have carefully considered the issues in this case in light of the evidentiary record and the positions advanced by the appellants and the examiner. Having done so, we conclude that the examiner has established a prima facie case of obviousness which is not outweighed by the evidence of nonobviousness adduced by the appellants. Accordingly, we shall affirm the rejection at issue.

We agree with the examiner that the Kuehl disclosure would have provided the requisite motivation under 35 U.S.C. § 103 to subject the EU-1 zeolite of Casci to "dealumination" (removal of aluminum) in order to enhance its catalytic activity, as suggested by Kuehl (col. 2, ll. 54-68; col. 12, ll. 59-63).

Appellants argue that the reasoning advanced by the examiner is an oversimplification of the Kuehl disclosure. According to the appellants, Kuehl attributes enhanced catalytic activity not to the removal of aluminum, per se, but to the resultant high

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[1]The final rejection included another ground of rejection based upon the application of Casci alone, alternatively under either 35 U.S.C. § 102(b) or 35 U.S.C. § 103. That rejection has been withdrawn by the examiner as being overcome by evidence submitted by appellants on Nov. 29, 1999 (Martino Declaration).

silica to alumina ratio. Therefore, according to the appellants, Kuehl, taken with Casci, would suggest that there is no difference between a zeolite produced by dealumination and one directly synthesized having the same silica to alumina ratio. Appellants rely on the Martino Declaration to show that an EU-1 zeolite produced by dealumination yields improved results as compared to a directly synthesized EU-1 zeolite having a similar silicon to aluminum ratio.

In our view, it is the appellants who have oversimplified the teachings of Kuehl. Although the examiner found the Martino Declaration convincing with regard to the prior rejection of appellants' "product-by-process" claims under 35 U.S.C. § 102 or 35 U.S.C. § 103 over Casci alone, the examiner found the declaration evidence unpersuasive with regard to the rejection at hand. We agree with the examiner that the Martino Declaration does not overcome the instant prima facie case of obviousness since Kuehl suggests doing what appellants have done, namely dealumination of a zeolite material to obtain improved properties.

Significantly, we find nothing in Kuehl which attributes the improvement in catalytic activity solely to an increase in the

silica to alumina ratio. In fact, one of ordinary skill in the art would readily appreciate from a perusal of the Kuehl disclosure that the ramifications of the dealumination process are much more complex. Specifically, Kuehl (col. 2, ll. 43-53) suggests that there are factors at play other than a mere change in the silica to alumina ratio: indicating that dealumination may trigger a change in the crystallinity of the zeolite material; and that there may be an optimum level of dealumination, after which further dealumination may prove counterproductive.

Despite these complexities, one of ordinary skill in the art would have been motivated by the Kuehl disclosure to dealuminate an EU-1 zeolite to optimize its catalytic properties.

Appellants urge that the Martino Declaration particularly supports the patentability of dependent claims 3-6. We disagree, as that Declaration is no more relevant to the rejection of those claims than it is to the rejection of independent claim 1.

For the foregoing reasons, and for the reasons set forth in the examiner's Answer, the decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

MARC L. CAROFF
Administrative Patent Judge

CATHERINE TIMM
Administrative Patent Judge

MARK NAGUMO
Administrative Patent Judge

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MLC:hh

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